gons and one is a square. (See *Phil. Mag.*, vol. xxiv., 1887, p. 503.)

Model of maximum pressure anemometer, designed by Mr. Whipple, Superintendent of Kew Observatory, exhibited by the Kew Committee. In this instrument eight small metal disks, each of 0·01 foot in area, are supported vertically against the wind by levers weighted in accordance with the various pressures of the wind on Beaufort's, or some other accepted scale of force. A vane keeps their surfaces normal to the wind's direction. By their displacement the maximum wind pressure during any desired period is registered. The large perforated disk against which they are pressed serves the purpose of removing the indicating disks beyond the action of the eddies of the wind playing round the edges of the plate.

Specimens of gold showing the effect of small quantities of impurity on the fracture of the metal, exhibited by Mr. W. C. Roberts-Austen, F.R.S.

Miners' electric safety-lamps, exhibited by the Schanschieff Electric Light and Power Company. (1) A three-cell lamp capable of giving 1½ candle-power for 9 hours. Each cell contains 5 fluid ounces of solution, and consumes ⅜ pound of zinc in 48 hours. The light is more than four times more powerful than that of the Clanny oil lamp, and its working cost is ⅝*d.* per shift of 9 hours, or 3¾*d.* per week. The weight when fully charged is about 3¼ pounds. The elements consist of carbon and zinc, and the excitant is a mercurial solution of Mr. Schanschieff's invention. (2 and 3) Four-cell batteries, one round and one square. Each cell contains 5 fluid ounces of solution, and at a cost of 1*d.* furnishes a light of nearly 2 candle-power for 9 hours. The weight when fully charged is 4½ pounds. (4) A four-cell reversible battery, *i.e.* put in or out of action by reversing it. The charge consists of 24 ounces of solution, and giving a light of 2 candle-power will burn from 10 to 12 hours at a cost of 1*d.* The batteries can be used for many purposes other than mining-lamps, viz. for microscopical purposes, house-lighting, photography, diving, railway-lighting, gun-firing, gas-works, &c.

THE ZOOLOGICAL SOCIETY OF AMSTERDAM.

THE celebration of the jubilee of the Zoological Society of Amsterdam (*Natura Artis Magistra*), on Tuesday and Wednesday, May 1 and 2, passed off with great *éclat.* Dr. Westerman, who has been Director of the Gardens for more than fifty years, may well be congratulated on the success of the jubilee *fêtes;* and the vigour with which he spoke at the banquet on May 1, and again at the distribution of honours on Wednesday, shows that his eighty years sit lightly upon him. One of the most interesting features of the jubilee commemoration was the performance of a festival cantata, specially composed for the occasion by Mr. De Langa, and this had to be repeated on Thursday for the benefit of half the members of the Society, for whose accommodation the enormous concert-room proved insufficient on the opening day. All the streets in the vicinity of the Zoological Gardens were gaily decorated with flags, and the rooms of the Society were ornamented in the day-time by a mass of gorgeous flowers and at night with brilliant illuminations. After the reception of the guests by the Committee on Tuesday morning, an adjournment was made to the King's Saloon, which was densely crowded, to hear an address from Prof. Stockvis. Luncheon followed, and then the cantata was given in the concert hall, and in the afternoon the new Ethnographical Museum was formally opened. The excellent way in which the collections had been arranged was generally remarked, and the Curator, Mr. Pleyte, was warmly congratulated. The public spirit which characterizes modern Amsterdam will doubtless soon cause this new Museum to become famous, as there is a vast field for research among the Netherland possessions in the East Indies. At the banquet in the evening, covers were laid for nearly 200 persons, and after the usual toasts, the health of the Queen of England was drunk by the assembled company with the greatest enthusiasm, and was responded to by Mr. Bowdler Sharpe, of the British Museum, who spoke in English, and took the opportunity of thanking the Dutch nation for the hospitality which he and his countrymen always received from the Netherlanders, to which he could testify from an experience of over twenty years. Speeches were also given by the Ministers of Finance and of the Interior, the Burgomaster of Amsterdam, and others; and the company then adjourned to witness a torchlight procession of students, who sent a deputation of their Senate to congratulate the venerable Director and the Committee of the Society. The young President of the Students' Senate, Mr. Van Schevichaven, made a most eloquent address, and was enthusiastically received. On Wednesday, May 2, a special reception of the Committee was held to confer diplomas on the new honorary members, and Prof. Hubrecht, of Utrecht, Dr. Jentink, the Director of the Royal Museum of Natural History at Leyden, and Mr. Büttikofer, of the same Museum, were the first recipients; being followed by Mr. A. D. Bartlett, the Superintendent of our Zoological Gardens in the Regent's Park, and Mr. Bowdler Sharpe. Amongst those who were unable to be present, but to whom the honorary membership of the Society was given, were Prof. Flowers, Dr. A. B. Meyer, &c. The large bronze medal of the Society was conferred on Mr. Charles Jamrach and Mr. G. A. Frank for services rendered in the formation of zoological collections, as well as on several other well-known zoologists. Mr. Jansen, the Librarian of the Society, and Mr. F. E. Blaauw, the Secretary, also received medals and diplomas. The latter gentleman has a large private menagerie, and is an enthusiastic supporter of the Society. Simultaneously with the festival celebration, the Society has issued a jubilee number of its *Bijdragen tot de Dierkunde*, containing several important memoirs, of which the following is a list:—(1) The opening address of Prof. Stockvis. (2) Mr. Maitland's review of the Society and its work, with a plan of the Gardens. (3) An account of the aquarium with 2 plates, by Dr. C. Kerbert, the Curator. (4) A list of all the animals which have lived in the Gardens from 1838 to 1888 by Mr. K. N. Swierstra. (5) A list of the birds of the Netherlands, by Mr. H. Koller, with an enumeration of the specimens in the Society's collection. (6) Description of a new species of *Proechidna* (*P. villosissima*) and an account of *Canis jubata*, by Prof. Max Weber: this article is illustrated by 2 plates. (7) A list of the *Macrolepidoptera* of Holland, by Dr. J. T. Oudemans. The Gardens of the Society seemed to be in flourishing condition, and the collections of Cranes and Antelopes were as remarkable as ever.

NOTES.

THE ceremony at Utrecht on May 28 to celebrate the seventieth birthday of Prof. Donders, and his consequent retirement from his Professorship, will comprise a formal presentation, at 1.30 p.m., of the sum collected, together with the roll of subscribers, and a public dinner at 5.30 p.m. After the ceremony of presentation the Professor will name the scientific purpose to which he proposes that the fund shall be applied. The complete list of subscribers from this country is to be seen in our advertising columns on page xviii. Any subscriber may verify the amount of his subscription by applying to Mr. Brailey, 11 Old Burlington Street, where the audited list may be seen. The total amount collected here is £280 11*s.* 10*d.* Prof. Humphry, Dr. Hughlings

Jackson, Mr. Hutchinson, and Mr. Brailey have been invited to attend as delegates to represent the subscribers, and it is hoped that many others may be able to attend, and by their presence do honour to Prof. Donders.

THE meeting of the National Academy of Sciences, lately held at Washington, seems to have been remarkably successful. According to *Science*, the most important papers read at the meeting were, the orbits of aërolites, by Prof. H. A. Newton; preliminary notice of the object, methods, and results of a systematic study of the action of definitely related chemical compounds upon animals, by Profs. Wolcott Gibbs and Hobart Amory Hare; and report of progress in spectrum photography, and note on the spectrum of carbon and its existence in the sun, by Prof. H. A. Rowland. Prof. Newton, in his paper, submitted the two following propositions:—(1) The meteorites which we have in our collections, and which have been seen to fall, were originally (as a class, and with a very small number of exceptions) moving about the sun in orbits that had inclinations to the ecliptic of less than 90°; that is, their motions in the solar system were direct and not retrograde. (2) The reason why we have only this class of stones in our collections is not a reason wholly, or even mainly, dependent on the habits of men; nor on the times when men are out of doors; nor on the places where men live; nor on any other principle of selection acting at or after the arrival of the stones at the ground. Either the stones which are moving across the earth's orbit in the solar system move in general in direct orbits, or else, for some reason, the stones which have retrograde orbits do not in general come through the air to the ground in solid form.

TWO gold medals were presented at this meeting: the Lawrence Smith gold medal to Prof. Newton for his study of meteors; the Henry Draper gold medal to Prof. E. C. Pickering for researches in stellar photography. On the evening on which these presentations were made the following obituary memoirs were read: on the late Prof. Henry Draper, of New York, by Prof. G. F. Barker, of the University of Pennsylvania; on Prof. Watson, of the University of Michigan, by Prof. Comstock; on Capt. J. B. Eady, by Mr. W. Sellers, of Philadelphia.

WE are glad to see that the National Association for the Promotion of Technical Education is hard at work, and that it is likely to do excellent service to the cause it supports. In reply to circulars sent out in August and September 1887 a good deal of information has been provided from various industrial centres, which it is hoped may form the basis of a fairly complete report as to what is being done for technical education in the United Kingdom at the present time. Meetings have been held in a good many towns, and in some cases branches or corresponding Associations have been established. The Association is also issuing a series of publications, each consisting of a page or two, and presenting in a clear, popular style some important aspect of the subject. Some of these papers are sold at sixpence, others at a shilling, per hundred, and we may hope that large numbers of them will be widely circulated. In a series of more elaborate publications the Association has included the admirable address delivered by Prof. Huxley at a meeting held in the Town Hall, Manchester, on November 29 last.

COLONEL TURNER'S Report on the present state of the borings in the Delta of the Nile has been received at the Royal Society. The total result of the whole operations is to prove that no rock exists at a depth of 345 feet at Zagazig; at a depth of 45 feet at Kasr-el-Nil; at 84 feet at Kafr-Zayat; or at 73 feet at Tantah.

THE May number of the Kew Bulletin contains an interesting paper, giving an account of the attempts that have been made to introduce ipecacuanha into India, and the successful cultivation of the plant in the Straits Settlement. There are also valuable papers on Brazilian gum arabic, Trinidad coffee, patchouli, Cochin China vine, Madagascar ebony, and Shantung cabbage.

ABOUT a year ago the Botanical Department, Jamaica, began to issue Bulletins. Six numbers have been sent to us, and each of them contains some contribution or contributions worthy of attention. The compilers very wisely keep local industrial needs steadily in view.

IN a Report on the province of Florence, just laid before Parliament, Mr. Colnaghi, British Consul-General, says that meteorological stations, both public and private, are now established at the following places in the province:—Florence (5), Fiesole, Vallombrosa, Prato, Pistoia, Scandicci, Empoli, Fiorenzuola, Castaletti, and thermo-pluviometrical stations at S. Miniato, Mercatale (in Rocca San Casciano), Pontassieve, and Barberino di Mugello. Amongst the more important of these, he mentions the Observatory of the Royal Museum of Physical Science, that attached to the medical section of the Reale Istituto di Studi Superiori, chiefly devoted to the study of the variations of the atmosphere, and the Osservatorio Ximeniano, which is, at the same time, astronomical, meteorological, and seismical, and is under the direction of the Fathers of the Scuole Pie. For many years, he adds, experiments have been made by Prof. F. Meucci, of the Observatory of the Royal Museum of Physical Sciences, for the purpose of ascertaining the correlation of meteorological phenomena with the productiveness of the soil, and a series of Reports have been published. In 1880 the Royal Tuscan Society of Horticulture established, in its experimental garden at Florence, a Meteorological and Physical Observatory, by means of which the relation existing between the vegetation of plants and the meteoric phenomena can be studied. The Royal Astronomical Observatory of Florence is established at Arcetri, and is under the direction of Prof. Tempel.

VOLUME X. of the *Repertorium für Meteorologie*, issued by the Imperial Academy of Sciences of St. Petersburg, and edited by Dr. H. Wild, contains, among other interesting discussions, one upon the anticyclones in Europe, by Dr. P. Brounow. He has investigated by means of synoptic charts the barometrical maxima which passed over Europe in the years 1876–79, with especial reference to their movements and their causes—questions which up to the present time have received but little attention, although they are intimately connected with the movements of cyclonic areas. The number of the maxima whose paths are drawn on the charts, are most frequent in August, and least so in July and March; and, generally speaking, their motion is towards east-south-east, while their motion towards the north-westerly portion of the compass is very rare. Among the chief results of his inquiry may be mentioned that the prevalent movement of the maxima does not coincide with that of the barometric minima, but deviates from it by an angle of $67\frac{1}{2}^{\circ}$. There appears to be no important difference in the mean velocity of their motion in different seasons, and although they move more slowly than the depressions, the difference of velocity is not so great as is generally assumed. Their origin is attributed to two principal causes: (1) terrestrial radiation, and (2) the proximity of two or more barometric minima. The work is accompanied by sixteen charts, from which the author concludes that the maxima advance generally in the direction in which the lowest temperature exists, and that the lower the temperature sinks the quicker the centre of the maximum advances, without reference to the season of the year.

AN important addition to the chemistry of the element tellurium is contributed by MM. Berthelot and Fabre to the May number of the *Annales de Chimie et de Physique*. They find that this metalloid, one of the most remarkable links between the non-metals and true metals, is capable of existing in three distinct allotropic forms. Besides the well-known crystalline form, exhibiting so strongly the metallic lustre, the form in which one always obtains it by volatilization in an atmosphere of hydrogen, it may be obtained by precipitation in two very different amorphous varieties. One of these is the product of the reduction of tellurous or telluric acids by sulphurous acid, and the other is formed when solutions of the alkaline tellurides are exposed to the oxidizing action of the air. Both these amorphous varieties are dark-coloured powders very liable to oxidation in the air, and only to be obtained pure by working in an atmosphere of nitrogen. The physical difference between the two is most strikingly shown, however, by their thermo-chemical behaviour. All three varieties are rapidly dissolved by a mixture of bromine and bromine water, and during the reaction in case of both the crystalline variety and the amorphous form obtained by oxidation of tellurides 33·4 heat units are evolved, while in case of amorphous tellurium derived by reduction with sulphurous acid only 21·3 units are disengaged. There was no mistake as to the purity of this latter kind, for it was completely converted to crystals on sublimation in a current of hydrogen. Hence it follows that one of the precipitated forms of tellurium corresponds to the crystalline state, and the other possesses an entirely different physical nature. It is curious, moreover, that all three modifications have the same specific heat. These interesting facts render the analogy between sulphur, selenium, and tellurium still more complete. MM. Berthelot and Fabre have also discovered a new and far superior method of preparing telluretted hydrogen. They first pass vapour of tellurium over metallic magnesium heated in a current of hydrogen, and afterwards treat the magnesium telluride thus formed with dilute hydrochloric acid in an apparatus previously filled with an atmosphere of nitrogen. The telluretted hydrogen, which is obtained in a very pure state by this new method, is very unstable, decomposing on standing in a tube over mercury even in the dark, coating the interior with tellurium and leaving its own volume of hydrogen. Decomposition is immediate in contact with moist air. In conclusion, the French chemists show that the combination of the elements of the sulphur group with hydrogen is attended with a beautifully graduated series of thermal changes, from water with heat of formation + 59 units down to telluretted hydrogen with − 35 units.

Science gives an interesting account of a magnificent ethnographical collection from Alaska, brought together by Lieut. Emmon. It has been presented to the American Museum of Natural History in New York, and forms a valuable supplement to the Powell collection from British Columbia, in the same Museum. While the latter includes principally specimens of Haida and Tsimpshian origin, the objects in the new collection come from the territory of the Tlingit, in whose country Lieut. Emmon spent more than five years. The collection includes a large number of masks. They are especially valuable, as Lieut. Emmon took great pains to ascertain the meaning of the masks, which thus became a rich source of information for the student of ethnology. A comparison of these masks with others collected on Vancouver Island and in Dean Inlet shows that the style of North-West American art, although uniform in general outlines, has its specific character in various localities. The imitation of animal forms is much closer here than in the southern regions, where the forms are more conventional, certain attributes of the animal alone being added to human figures. Another and a very interesting peculiarity of these masks is to be found in the figures of animals attached to the faces. The Eskimo tribes of Southern Alaska carve their masks in the same fashion, numerous attachments belonging to each. This is another proof of the influence of Indian art upon that of the Eskimo. The figures attached to the faces refer, as a rule, to certain myths; and the like is true of the Eskimo masks and their characteristic wings and figures. A considerable number of masks show deep hollow eyes and sunken cheeks. They represent the heads of dead men. Masks with thick lips and beards, and eyebrows made of otter skin, represent the fabulous Kushtaka, the otter people, of which many tales and traditions are told. Another remarkable mask is that of the mosquito. This is of special interest, as the mosquito is among the southern tribes the genius of the cannibal; and as cannibalistic ceremonies are not known to be practised by the Tlingit, it may be assumed that the myth referring to the mosquito is found in a somewhat altered form among the Tlingit.

WE learn from *Science* that a Bill providing for the establishment of a zoological park in Washington has been introduced into the United States Senate. The Bill creates a Commission, which is directed to secure one hundred acres of land bordering on Rock Creek, about one mile from the city, to prepare the grounds and erect suitable buildings upon it. The park is then to be transferred to the regents of the Smithsonian Institution for their future custody and care. The site indicated is one of the most beautiful in the District of Columbia. It is composed of rolling ground, with the beautiful Rock Creek flowing through it, and it is adjacent to Woodley Park, one of the most charming of the recent additions to Washington. A street-railway to it is already projected.

THE United States Bureau of Education has issued an elaborate report of the proceedings of the Department of Superintendence of the National Educational Association at its meeting at Washington from March 15 to 17, 1887. The volume includes addresses and papers by some of the most eminent American authorities on questions relating to education.

THE people of Cleveland, where the American Association for the Advancement of Science will meet in August, have already begun to prepare for the meeting, which is expected to mark an epoch in the history of the city. At a recent meeting of citizens, summoned for the purpose of appointing various local committees, an interesting address on the history of the Association and its objects was delivered by Prof. F. W. Putnam, the Peabody Professor of American Archæology and Ethnology in the University of Harvard, and Permanent Secretary of the Association since 1873.

ACCORDING to the *Colonies and India*, the Government of South Australia have issued Part 8 of a work on "The Forest Flora of South Australia," which is said to be the best illustrated publication ever issued in the colony. Mr. Brown, Conservator of Forests, under whose direction the book is brought out, supplies the letterpress descriptions of the plants pictorially represented.

THE American publishers, Messrs. D. C. Heath and Co., have in the press a book of "Chemical Problems," by Drs. Grabfield and Burns, of the Massachusetts Institute of Technology.

A FOURTH edition of Prof. G. Henslow's "Botany for Beginners" (Stanford) has just been issued. In this little book Prof. Henslow provides a short course of elementary instruction in practical botany, for junior classes and children.

AT the anniversary meeting of the Hertfordshire Natural History Society, held on February 21 last, Mr. F. Maule Campbell, the President, delivered an interesting address on the means of protection possessed by plants. This address is printed in the Transactions of the Society, and has now been issued separately.

THE London Geological Field Class, under the direction of Prof. H. G. Seeley, begins the summer excursions on Whit Monday, May 21, and will continue them on Saturday afternoons thereafter up to July 14. The following are among some of the places which will be visited : Leatherhead and Boxhill, to examine the gorge of the Mole in chalk ; Maidstone and the vicinity, for gravels ; Woolwich and Reading beds, chalk gault, and lower greensand ; Erith and Crayford, for river gravels ; Grays (in Essex), Northfleet, and Oxsted, for studies in chalk ; and other places besides. Intending students should apply for tickets at once, as only a limited number are issued. Application forms may be had from Mr. W. P. Collins, 157 Great Portland Street.

THE additions to the Zoological Society's Gardens during the past week include a Blue and Yellow Macaw (*Ara ararauna*), from South America, presented by Mrs. Warrand ; two White Ibis (*Eudocimus albus*), from South America, deposited ; two Black-backed Geese (*Sarcidiornis melanonota* ♂ ♀), from India, purchased ; a Puma (*Felis concolor*), two Long-fronted Gerbilles (*Gerbillus longifrons*), a Hog Deer (*Cervus porcinus*), a Sambur Deer (*Cervus aristotelis* ♂), born in the Gardens.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1888 *MAY* 20–26.

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on May 20

Sun rises, 4h. 2m.; souths, 11h. 55m. 21·0s.; sets, 19h. 50m.: right asc. on meridian, 3h. 50·6m.; decl. 20° 8′ N. Sidereal Time at Sunset, 11h. 45m.

Moon (Full on May 25, 14h.) rises, 13h. 0m.; souths, 19h. 49m.; sets, 2h. 23m.*: right asc. on meridian, 11h. 44·2m.; decl. 6° 3′ N.

Planet.	Rises.	Souths.	Sets.	Right asc. and declination on meridian.	
	h. m.	h. m.	h. m.	h. m.	° ′
Mercury..	4 25	12 43	21 1	4 37·3	23 42 N.
Venus ...	3 35	11 0	18 25	2 54·0	15 26 N.
Mars ...	15 7	20 49	2 31*	12 44·8	4 12 S.
Jupiter ...	19 49*	0 7	4 25	15 59·5	19 33 S.
Saturn ...	8 27	16 22	0 17*	8 16·7	20 22 N.
Uranus ...	15 16	20 55	2 34*	12 50·8	4 43 S.
Neptune..	4 13	11 57	19 41	3 51·8	18 31 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

Occultations of Stars by the Moon (visible at Greenwich).

May.	Star.	Mag.	Disap.	Reap.	Corresponding angles from vertex to right for inverted image.	
			h. m.	h. m.	°	°
20	B.A.C. 3996	6	19 0	near approach	142	—
21	*b* Virginis...	6	0 57	1 44	139	254
24	η Libræ ...	6	22 52	23 23	128	184
25	θ Libræ ...	4½	3 45	4 39†	85	322
26	B.A.C. 5700	6½	4 14	4 44	175	236

† Below horizon at Greenwich.

May.	h.	
21	2	Jupiter in conjunction with and 0° 2′ north of β Scorpii.
21	23	Mars in conjunction with and 4° 32′ south of the Moon.
22	5	Jupiter in opposition to the Sun.
23	11	Mars stationary.
25	7	Jupiter in conjunction with and 3° 34′ south of the Moon.

Variable Stars.

Star.	R.A.	Decl.			
	h. m.	° ′		h. m	
U Cephei	0 52·4	81 16 N.	May 22,	1 17	*m*
S Persei	2 14·8	58 4 N.	„ 22,		*m*
W Virginis	13 20·3	2 48 S.	„ 26,	3 0	*m*
U Coronæ	15 13·6	32 3 N.	„ 25,	2 55	*m*
U Ophiuchi... ...	17 10·9	1 20 N.	„ 23,	1 22	*m*
S Sagittæ	19 50·9	16 20 N.	„ 25,	3 0	*m*
R Sagittæ	20 9·0	16 23 N.	„ 23,		*m*
T Vulpeculæ ...	20 46·7	27 50 N.	„ 23,	2 0	*M*
δ Cephei	22 25·0	57 51 N.	„ 25,	2 0	*m*

M signifies maximum ; *m* minimum.

GEOGRAPHICAL NOTES.

AT Monday's meeting of the Royal Geographical Society Lieut. F. E. Younghusband gave an account of his journey across Central Asia, from Manchuria and Peking to Kashmir and the Mustagh Pass. This is the most important paper which has been read at the Society during the present session, and the journey one of the most remarkable ever made, considering its length, the time taken—April to November, 1887—and the novelty and value of the results. We have only space to refer briefly to Lieut. Younghusband's observations on the Mustagh Pass, which he has been the first European to cross. He crossed the Gobi Desert to Hami by a route lying between those of Marco Polo and Mr. Ney Elias. His observations in the Gobi are of much interest. The clearness and dryness of the atmosphere were remarkable. Everything became parched up, and so charged with electricity that a sheepskin coat or blanket, on being opened out, would give out a loud crackling noise, accompanied by a sheet of fire. At the western end of the Hurku Hills, beyond the Galpin Gobi—the most sterile part of the whole Gobi—is a most remarkable range of sand-hills. It is about 40 miles in length, and is composed of bare sand, without a vestige of vegetation of any sort on it, and in places it is as much as 900 feet in height, rising abruptly out of a gravel plain. With the dark outline of the southern hills as a background, this white, fantastically-shaped sand-range presents a very striking appearance. It must have been formed by the action of the wind, for to the westward of this range is an immense sandy tract, and it is evident that the wind has driven the sand from this up into the hollow between the Hurku Hills and the range to the south, thus forming these remarkable sand-hills. It was near this region that traces of the wild camel were met with, and both wild asses and wild horses seen. As far as Hami the country continues to be mainly desert. From Hami, Lieut. Younghusband went on to Yarkand, and by the Yarkand River to the Karakorum Range, which he meant to cross by the Mustagh Pass. The difficulties, owing to the enormous glaciers, the rugged nature of the mountains, and great height of the pass, were very great for Lieut. Younghusband, his men, and his ponies. The glaciers here are of enormous size, and Lieut. Younghusband has added considerably to the information obtained by Colonel Godwin-Austen, who surveyed the region to the south of the pass twenty-six years ago. "The appearance of these mountains," Lieut. Younghusband stated, "is extremely bold and rugged as they rise in a succession of needle peaks like hundreds of Matterhorns collected together; but the Matterhorn, Mont Blanc, and all the Swiss mountains would have been two or three thousand feet below me, while these mountains rose up in solemn grandeur thousands of feet above me. Not a living thing was seen, and not a sound was heard ; all was snow and ice and rocky precipices ; while these mountains are far too grand to support anything so insignificant as trees or vegetation of any sort. They stand bold and solitary in their glory, and only permit man to come amongst them for a few months in the year, that he may admire their magnificence and go and tell it to his comrades in the world beneath." After some extremely difficult prospecting, Lieut. Younghusband made up his mind to cross the old and long-abandoned Mustagh Pass, instead of the new one. "Next morning," he stated, "while it was yet dark, we started for the pass, leaving everything behind, except a roll of bedding for myself, a sheepskin coat for each man, a few dry provisions, and a large tea-kettle. The ascent to the pass was quite gentle, but led over deep snow in which we sank knee-deep at every step. We were now about 19,000 feet above the sea-level, and quickly became exhausted. In fact, as we got near the summit, we could only advance a dozen or twenty steps at a time, and we would then lean over on our alpenstocks, and gasp and pant away as if we had been running up a steep hill at a great pace. But it was not till midday that we reached the summit, and then on looking about for a way down we could see none. Huge blocks of ice had fallen from the mountains which overhang the pass, and had blocked up the path by which travellers used formerly to descend from it, and the only possible way now of getting to the bottom was by crossing an icy slope to a cliff, which was too steep for a particle of snow to lodge on it, even in that region of ice and snow. From this we should have to descend on to some more icy slopes which could be seen below. . . . We had first to cross the icy slope ; it was of smooth ice and very steep, and about thirty yards below us it ended abruptly, and we could see